1   **SPECIFICATION**

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3   **Method for Selecting Multiple Hyperlinks**

4   This application is a continuation-in-part of U.S. Application No. 09/353,100, filed July 14,

5   1999, entitled "User-Controllable Presentation of Multiple Web Pages in One Single, Continuously

6   Scrollable Display." The present invention provides a user-controlled system to change the

7   functionality of hyperlinks contained on a Web page to allow the collection of multiple links and

8   the subsequent display of all information associated with the collected links inside a single,

9   continuously scrollable Web page.

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11   **Background of the Invention**

12   Applicant's earlier invention is a method for allowing a user to supply a list of uniform

13   resource locators (URLs) pointing to hypertext markup language (HTML) files which are to be

14   displayed as a "masterpage" inside a single browser window. The URL list is sent to a "masterpage

15   engine" that collects and parses each page before combining it into the masterpage. The present

16   invention relates to the characteristics of hyperlinks on a Web page and to the processes triggered

17   by clicking on those hyperlinks or of changing the standard behavior of hyperlinks. More

18   specifically, this invention allows a user to select multiple hyperlinks by clicking on them to create

19   a URL list in the computer's memory that can then be sent to the masterpage engine and displayed

20   as a single masterpage.

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22   **Description of Related Art**

1   Hyperlinks are especially marked textual or graphical components on a Web page having

2   the characteristic that each hyperlink has a Web address (also known as a URL) encoded within it.

3   When the component is clicked on with a pointing device such as a mouse, the hyperlink causes a

4   Web browser to display the Web page associated with the hyperlink's encoded URL, either by

5   replacing the currently displayed Web page or by creating a new browser window for the display.

6   Textual hyperlinks are usually underlined and colored blue; however, this is a convention only. The

7   defining element of a hyperlink is the underlying HTML code that is used to turn normal text or a

8   graphic into a hyperlink. A hyperlink's HTML code has the format: normal text

9   or graphic (with "url" standing for the Web address of the Web page to be displayed when the

10   hyperlink is clicked on.

11   Web pages may contain many hyperlinks (as, for instance, on a newspaper's Web page

12   where the article headlines may work as hyperlinks that display the associated article texts when

13   clicked on). The prior art process of viewing (also called "following") a Web page containing many

14   hyperlinks is a time-consuming one, requiring the viewer to go back and forth from the page

15   containing the links to each individual link, and including multiple waits while each linked page

16   loads.

17   The standard process for viewing multiple Web pages requires the viewer to take following

18   steps: Click on hyperlink; download associated Web page from the Web server (either inside

19   current or inside new, additional browser window); view the Web page; click the browser's "Back"

20   button (if the linked Web page opened inside the current browser window) or close browser window

21   (if new additional browser window was opened) to return to page with the original hyperlink; and

22   repeat the sequence to view next hyperlink. The process becomes especially inefficient if the page

23   loading time and the navigational cursor movement takes longer or almost as long as viewing the

1   hyperlinked Web pages themselves (as is the case with small Web pages, for instance on message

2   boards Web sites or retail Web sites).

3   The 09/353,100 patent application, of which this is a continuation-in-part, describes one

4   method for displaying multiple Web pages inside a singe, continuously scrollable Web page called

5   a "masterpage". A list of URLs selected by a viewer is processed such that all Web pages associated

6   with the URLs are displayed inside a single masterpage. Specifically, the process provides a Web-

7   based input interface (called a "form field box") into which users manually enter URLs that they

8   wish to view as a "masterpage." When entry is complete, a URL list is created in a computer's

9   memory and is passed on to the masterpage engine, which obtains each specified Web page and

10   presents it as a single, scrollable masterpage. However, even though much of the back-and-forth

11   activity associated with standard viewing of multiple links is alleviated in the prior application, there

12   is still an inefficiency in a viewer's having to manually enter in a list each URL that he or she wishes

13   to view. In addition, there is the associated problem of typographical errors that may crop up in

14   manually typing URLs, many of which may lack punctuation or may use unusual punctuation.

15   Accordingly, there is a need for a method that will allow all selected links to be gathered

16   merely by clicking on them, and to be displayed as a single, continually scrollable page. Such a

17   method will eliminate much time that is presently wasted in viewing each hyperlinked page

18   individually, and will reduce or eliminate the incidence of errors caused by a user's having to

19   manually type each URL that he or she wishes to view.

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21   **Summary of the Invention**

22   The operating environment for the present invention encompasses general distributed

23   computing systems wherein any computer, using any one of a variety of operating systems, is

1   connected to a Web server via a communication link. This invention provides a method of

2   specifying URLs and creating a URL list simply by clicking upon hyperlinks the user wishes to

3   view. Once created, the URL list is built and passed to the masterpage engine for download, parsing,

4   and display as a masterpage, as is described in the pending application. According to this invention,

5   the functionality of hyperlinks in a Web page is modified to provide a method of building of a URL

6   list by clicking on multiple links. Clicking on a link does not open the associated Web page, which

7   is the standard behavior of hyperlinks, but instead adds the associated URL to a URL list which can

8   then be passed on to the masterpage engine for display as a masterpage. This process of navigating

9   many links on a Web page saves time by replacing the tedious back-and-forth style of the standard

10   navigational method with the much more convenient viewing of a single masterpage that contains

11   all of the combined information associated with multiple links.

12   In accordance with the present invention, the problem of collecting the URLs of multiple

13   hyperlinks into a URL list and then displaying said URLs as a masterpage has been addressed by

14   modifying the HTML code of the Web page containing the links such that the set of actions

15   normally triggered by clicking on said links is modified to cause the URL to be listed in a URL list.

16   The HTML code of the Web page containing the links is further modified so that the Web page will

17   display additional control elements (links or buttons) that allow the user to change the hyperlinks'

18   behavior and to build a URL list to be passed to the masterpage engine for display of a masterpage.

19   This can be done in a variety of ways, including by the user's inserting an additional block of HTML

20   code in the page after it has been downloaded to a browser, or by downloading a plug-in module to

21   modify the behavior of the browser, or by the Web page owner incorporating that code into the page

22   as it resides on the Web server.

1   In this invention, two control elements are presented to the user: One control element allows

2   the user to choose to change the behavior of hyperlinks; and a second control element allows the

3   user to send the URL list to the masterpage engine to create and display the masterpage. These two

4   switches could be combined into a single switch that changes its characteristics based on context.

5   However, for the purpose of clarity in this description, it shall be assumed that separate switches are

6   provided for each switch function.

7   The change in the hyperlinks' behavior is effected by so called "onClick" Javascript

8   commands embedded inside the HTML code of the Web page. These commands allow the

9   definition of alternative actions to be triggered when a link is clicked on. For the purpose of this

10   invention, the OnClick command is used to cause a hyperlink's URL to be added to a URL list

11   contained inside the computer memory (specifically, inside a Javascript variable). However, one

12   could achieve the same alteration of the hyperlink's behavior without using Javascript OnClick

13   commands by modifying the browser's client-side software code, for instance through a

14   downloadable plug-in. By virtue of the same plug-in or similar software download, the above-

15   described switches for toggling the link behavior and for displaying the masterpage could be located

16   in the browser's control bar or in any other area of the computer's display area.

17   The embodiments of the invention described herein are implemented as logical operations

18   in a computer system. The logical operations of the present invention are carried out (1) as a

19   sequence of computer-implemented steps performed on a server system interacting with a client

20   system; or (2) as a sequence of computer-implemented steps performed on a client system only. The

21   implementation is a matter of choice depending on performance requirements.

22   In one embodiment, the software implementing the invention is completely contained on

23   the Web server. This configuration has the utility that the user can use any currently available

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1   browser to access the implementation of the invention without having to install a computer program

2   or other additions to the user's local machine ("client machine"). However, the process of building

3   URL lists for further display inside a single continuously scrollable masterpage may also be

4   achieved by installing additional software on a client machine, for instance using a "browser plug-

5   in" that enhances the capability of currently available browsers.

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Objects of the Invention

8   It is an object of this invention to provide a user with a faster way of navigating Web pages

9   that contain multiple links. It is also an object of this invention to offer a user a control element (a

10   link or a button) that allows the user to change the functionality of links on a Web page from their

11   normal mode of operation to a mode that adds the URL of the associated Web page to a URL list

12   contained in the computer's memory. It is a further object of this invention to provide the user with

13   a second control element that, when applied, will pass the URL list to the masterpage engine to

14   cause the display of a masterpage containing all the pages associated with the URLs inside the URL

15   list.

16   These and other features, utilities and advantages of the invention will be explained in more

17   detail in the following, more specific description of the preferred embodiments of the invention as,

18   illustrated in the accompanying drawings.

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Brief Description of the Drawings

21   The objects of the present invention can be found in the detailed description of the preferred

22   embodiment when taken in conjunction with the accompanying drawings, illustrating the invention

23   by way of example and not limitation, with like references indicating similar elements.

1   Figure 1 illustrates the process flow of the present invention.

2   Figure 2 illustrates the decision process for the present invention.

3   Figures 3a and 3b contrasts the flow of navigating hyperlinks on a standard Web page with

4   the flow of navigating hyperlinks on a Web page using the method of this invention.

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6   **Detailed Description of the Drawings**

7   Figure 1 illustrates the concept of the present invention by showing the components of a Web

8   page that has multiple hyperlink selection installed. In Figure 1, a Web page having five hyperlinks

9   is displayed 100. Clicking on any of the links causes the URLs associated with each clicked-on link

10   to be added to a URL list 110 contained in the client computer memory. After the desired links have

11   been selected, the display button is clicked, causing the URL list 110 to be passed to the masterpage

12   engine 120. After retrieving the pages to be displayed the masterpage engine will display the pages

13   associated with the URLs in the URL list as a single, continuously scrollable page 130, containing

14   the combined individual pages referenced in the URL list 110.

15   Figure 2 illustrates the decision process for the method of this invention. Step 200 displays

16   a Web page having multiple links. Step 210 checks to see whether multiple links mode has been

17   selected. If it has not, normal hyperlink processing will occur. When a link is clicked 220, the page

18   associated with the link will be displayed 230, and the process may thereafter be repeated.

19   If multiple link mode has been selected 210, then the URL list contained in the computer

20   memory will be initialized 240, *i.e.*, if any URLs are remain in the list from the last list created, they

21   will be deleted. When a hyperlink is clicked-on 250, the URL associated with the clicked-on link

22   will be added to the URL list contained inside the computer's memory 260. If the display button is

23   not activated at that time270, additional links may be selected 250. However, if the next event is

1   to click the display button, 270, then the URL list is passed to the masterpage engine for collection

2   of multiple pages and display of the pages as a masterpage 280. Where the masterpage itself

3   contains multiple links, the process may again be initiated with the display of the masterpage

4   commencing the sequence at 200.

5   Fig. 3a illustrates the steps a user must take to view multiple Web pages by conventional

6   means. At 310, a user clicks on a hyperlink. After the page at the URL downloads, the user may

7   view it 320. Once viewing is complete, the user must click the "back" button of his or her browser

8   330 to return to the original page to select another link for viewing. In the event that a user wishes

9   to re-visit any particular link, he or she may repeatedly click the "back" browser button until the

10   correct page is shown, or must again click the link and await the redisplay of the page. These steps

11   may be contrasted with Figure 3b, which illustrates the steps a user must take in accordance with

12   the present invention. After clicking all links he or she wishes to be displayed 340, the user simply

13   clicks the display button 350 and can then scroll through the display to view all pages from selected

14   hyperlinks. If the user wishes to re-view one of the selected links, he or she need only scroll the

15   masterpage until it is located.

16   While the invention has been described, disclosed, illustrated and shown in various

17   terms or certain embodiments or modifications which it has assumed in practice, the scope of the

18   invention is not intended to be, nor should it be deemed to be, limited thereby and such other

19   modifications or embodiments as may be suggested by the teachings herein are particularly reserved

20   especially as they fall within the breadth and scope of the claims here appended.

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